

[Attorney's Docket No.: A0626/7001]
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composition [in solution in an aqueous vehicle and] having a pH of from 2 to 12, to form a coating of silver on the surface of the first metal [surface].

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2. (Amended) A process according to claim 1, wherein step (a) includes contacting the aqueous composition with a surface of the first metal having [in which the process is for forming a protective coating on a substrate in which the metal surface comprises] conductive metal pads, conductive metal [and/or] through-holes or a combination thereof of a bare board, and in which the substrate includes non-metallic areas which remain uncoated in the process, preferably solder-mask coated areas.
3. (Amended) A process according to claim 1 or claim 2, wherein step (a) includes contacting a copper surface with the aqueous composition [in which the metal surface comprises copper].
4. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the complexing agent [is present in a higher molar amount than] has a first molarity and the silver ions [, preferably at least twice the molar amount] have a second molarity, the first molarity being greater than the second molarity.
5. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the silver ions are present [in the displacement plating composition] at a concentration of from 0.06g/l to 32 g/l [, preferably from 0.1 to 25 g/l, most preferably from 0.5 to 15 g/l].

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6. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the complexing agent is present in [the composition] in an amount of from 0.1g/l to 250 g/l[, preferably from 10 to 100 g/l].

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7. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the complexing agent is selected from the group consisting of ethylenediamine tetra-acetic acid, diethylenetriamine penta-acetic acid, [and] N,N,N',N'-tetrakis(2-hydroxy propyl)ethylene diamine and mixtures thereof.

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8. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the displacement coating composition [comprises] is selected from the group consisting of a surfactant, wetting agent, stabilizer, grain refiner, [and/or] tarnish inhibitor and mixtures thereof.

9. (Amended) A process according to claim 8, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which a surfactant [is incorporated in the displacement plating composition at] has a concentration of from 1 g/l to 15 g/l.

10. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition [in which the plating composition is] free of any reducing agent capable of reducing the silver ions to silver metal [and free of halide ions].

11. (Amended) A process according to claim 1, wherein step (a) includes a step of [in which contacting the metal surface with the displacement coating composition is by] spraying the aqueous composition or dip-coating the aqueous composition in an immersion bath [and in which

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excess composition is reused in the process].

12. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition [in which the metal surface is contacted with the immersion coating composition] for from 10 seconds to 10 minutes[, preferably] at a temperature of from 10°C to 60°C[, most preferably at a temperature of from 15 to 50°C].

13. (Amended) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition so that the [in which] the silver coating on the first metal is less than 0.5 μm thick.

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14. (Amended) A process according to claim 1, further comprising, [in which] prior to [the immersion plating step] (a), a step of [the metal surface is cleaned by] contacting the surface of the first metal with an acidic cleaning solution [in an acid cleaning step, preferably undergoing a post-rinse step prior to the immersion plating step] to clean the surface of the first metal.

15. (Amended) A process according to claim 1, further comprising, [in which] prior to [contacting the metal surface with the immersion plating composition] step (a), a step of [the metal surface undergoes a] micro-etching the surface of the first metal [step and preferably between the micro-etching step and the immersion plating step, there is an additional acid rinse step].

16. (Amended) A process according to claim 1, further comprising steps of: [in which the silver coated metal surface is subsequently rinsed and, optionally, dried] rinsing the coating of silver; and

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drying the coating of silver.

17. (Amended) A process according to claim 1, further comprising a step of soldering [in which] a conductor component [is subsequently soldered direct] to the coating of silver [coating].

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18. (Amended) A [multi-step] process for producing a bare printed circuit board [including the step] comprising steps of:

- i) providing [by a subtractive or additive process] a substrate having exposed metal conductor traces and pads [and/or] through-holes or a combination thereof, the [said] metal [being less electropositive] having an electropositivity less than an electropositivity of silver,
- ii) applying a mask to cover at least the [said] traces and [leaving] to leave at least some of the pads, the [and/or] through-holes or the combination thereof exposed, the mask being [of an insulating composition] an insulator, and
- iii) [forming a silver coating on the exposed pads and/or through-holes by] contacting the metal surface with an aqueous [displacement plating] composition comprising silver ions and a multidentate complexing agent, the aqueous composition [in solution in an aqueous vehicle and] having a pH of from 2 to 12, to form a coating of silver on the metal surface.

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Add the following new claims:

19. (New) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition free of a material selected from the group consisting of ammonia, ammonium ions, cyanide ions, formaldehyde, and combinations thereof.

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20. (New) A process according to claim 1, wherein step (a) includes contacting the surface of the first metal with an aqueous composition including a buffering agent.

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21. (New) A process according to claim 4, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the first molarity is twice as large as the second molarity.

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22. (New) A process according to claim 5, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the silver ions are present at a concentration of from 0.1 g/l to 25 g/l.

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23. (New) A process according to claim 5, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the silver ions are present at a concentration of from 0.5 g/l to 15 g/l.

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24. (New) A process according to claim 6, wherein step (a) includes contacting the surface of the first metal with an aqueous composition in which the complexing agent is present in an amount of from 10 g/l to 100 g/l.

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25. (New) A process according to claim 10, wherein step (a) includes contacting the surface of the first metal with an aqueous composition free of halide ions.

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26. (New) A process according to claim 12, wherein step (a) includes contacting the surface of the first metal with an aqueous composition at a temperature of from 15 to 50°C.

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27. (New) A plated material, comprising:
a layer of copper having a surface; and
a layer of silver plated to the surface of the layer of copper, the layer of silver
having a wet time of less than 5 seconds after being exposed for 18 hours to 40°C/93% RH and 3
reflows.

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28. (New) A plated material according to claim 27, wherein the layer of metal plating
has a wet time of at most 0.95 seconds.

29. (New) A plated material according to claim 27, wherein the layer of metal plating
has a wet time of at most 0.9 seconds.

30. (New) A layer of plating material according to claim 27, wherein the layer of silver
plated to the surface of the layer of copper has a thickness of at most 2 micrometers.

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31. (New) A plated material comprising:
a layer of copper having a surface; and
a layer of silver plated to the surface of the layer of copper, the layer of silver
having a wet force of greater than -0.2 after 2 seconds immersion and storage for 18 hours at
40°/93% RH.

32. (New) The plated material according to claim 31, wherein the layer of silver plated
to the surface of the layer of copper has a wet force of at least 0.3.